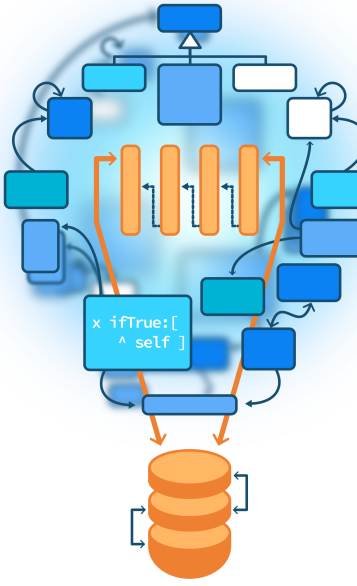
About Registration

When class method-based registration is too much

S.Ducasse, L. Fabresse, G. Polito, and P. Tesone



Goal

- Thinking about system dynamics
- Alternatives to class methods as registration mechanism
- Impact of dynamic registration

Using class methods as registration

- A class is a regular object
- We can send a message to a class
- Each class can answer specifically

```
Object allSubclasses collect: [ :each | each foo ]
```

Each class is able to:

- define its own foo method
- reuse the one of its superclass

Remember...

An extensible design by iterating subclasses:

```
PillarParser >> documentClasses
  ^ DocumentItem allSubclasses
    sorted: [ :class1 :class2 |
      class1 priority < class2 priority ]
```

```
PillarParser >> parse: line
  self documentClasses
    detect: [ :subclass |
      (subclass canParse: line)
        ifTrue: [ ^ subclass newFromLine: line ] ]
```

Registration for ‘Free’

Pros:

- Each time a new class is loaded it is taken into account

Cons:

- We are querying the system each time
- Most of the time for nothing
- Expensive mechanism

Solution 1: Explicit static list

```
PillarParser >> documentClasses
  ^ { Section. List. Paragraph }
    sorted: [ :class1 :class2 | class1 priority < class2 priority ]
```

Solution 1: Explicit static and ordered list

We could precompute the priority too:

```
PillarParser >> documentClasses
  ^ { Section. Paragraph. List }
```

Solution 1: Evaluation

Pros:

- Do not have to query all the classes all the time

Cons:

- You have to keep this list up to date
- Listing explicitly classes may introduce undesired dependencies to other packages!

Solution 2: Explicit registration mechanism

Classes can explicitly register themselves to the parser:

```
PillarParser >> documentClasses
  ^ RegisteredClasses

PillarParser >> registerClass: aDocumentItemClass
   self documentClasses add: aDocumentItemClass
```

```
Section class >> initialize
  PillarParser registerClass: self

Paragraph class >> initialize
  PillarParser registerClass: self
```

Solution 2: Evaluation

- No need to maintain the list of classes manually
- Dynamic list without querying the system all the time
- Registration could support priority
- External classes can also register

```
Extra class >> initialize
  PillarParser registerClass: self
```

- Do not introduce unwanted dependencies

Unregistration is a concern

Explicit registration requires unregistration.

- The registration holder (here PillarParser) should offer a way to remove a registration
- Registered classes have the responsibility to unregister themselves (e.g. class unloading)

Conclusion

- MySuperClass subclasses is a cool pattern
  - but it has a cost!
- Better use an explicit registration mechanism
  - it is dynamic and save expensive queries for nothing
- Design is about tradeoffs

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